make us pause, *e.g.* the suggestion (after rejecting all others known to the author) that the biological significance of the stag's antlers is to divert the attention of enemies from the hinds. Sometimes we wish the author had been a little more bookish, for his remarks on the correlation between antlers and reproductive organs are far from being up to date. We are sorry that he has no contribution to make to our knowledge of the method of the ermine's assumption of its white dress, the precise mode of which seems still uncertain. Was Prof. MacGillivray right or Mr. Aplin, or were both right? Sometimes the author's generalisations pull us up with a start: "There is no logic in the ways of Nature." But we thought that Darwin proved there was! The fact is that Mr. Mortimer Batten is stronger on the side of natural history than on the side of biology. He rather scoffs at the protective value of the whiteness of the mountain hare in winter, but he does not mention the other utilitarian interpretation—in relation to body-temperature. He says of the common hare: "Wherein lies the secret of the hare's survival? In its fecundity, and there alone." Yet the preceding pages make it perfectly clear that this is not the case. Again, to take a more concrete point, it is surely in a metaphorical sense only that we can speak of the hedgehog's fat serving "as sustenance during the foodless days of sleep." It is interesting to notice that the author occupies a Lamarckian position as regards the mental endowment of the subjects of his studies:—"All these things the water-voles of to-day do not, probably, reason out for themselves; the knowledge of them has been inherited from countless generations of forefathers who, atom by atom, grain by grain, have profited by their experience, and, acting accordingly, have handed their lessons on to their children, thus establishing such life habits and customs of the species that we have to-day a water-vole that can hold its own." But we are afraid there is no plane-sailing for this theory.

We have often thought that great benefit might result to science if a field-naturalist like Mr. Mortimer Batten were to test biological theories in the light of the everyday life of the creatures he knows. If, however, this is to be of avail, the field-naturalist must first sit at the feet of the biologists, and he will not do this because they do not know a badger's track. Thus the possibilities of a mutually profitable partnership are lost. We must not forget, however, that this book was meant, not for biologists, but for ordinary folk interested in the country, especially for those who can understand and sympathise with the author's plea for the pine-marten. To such the book is strongly to be recommended. It is first-hand material, vividly presented, abounding in picturesque and essential detail, and making a resolute attempt to see each of these wild mammals as an individuality with a character and temperament of its own.

Forestry in France.

Studies in French Forestry. By T. S. Woolsey, jun. With two chapters by W. B. Greeley. Pp. xxvi+550. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1920.) 36*s.* net.

MR. T. S. WOOLSEY, who is well known as an expert in and an authoritative writer on forestry, has given to American and British foresters in his "Studies in French Forestry" a means of gaining a deep insight into the theory and practice of forestry in France. The material for the present book was collected largely in 1912, but administrative work at home and service with the U.S. Corps of Engineers during the war prevented earlier publication. That is, we think, a fortunate thing, because the author has been able to include much information regarding the wonderful organisation of the French Forestry Service and the Allied Forestry Corps in maintaining an adequate supply of timber. Many forests had to be clear-felled, and others were so depleted of growing stock that "normal" production cannot be secured for a century or more. There are more than a million acres of French soil to be restored to productivity, and the rehabilitation of innumerable forests—300,000 acres—the growing stocks of which have been cleared or seriously depleted, must be brought about by the strictest economy at a time when the economic demands for wood products will be at least double the normal consumption.

The attitude of public opinion in France in regard to the *rôle* of the forest in national economics is reflected in the extremely stringent regulations contained in the National Forest Code. The common law alone is regarded as inadequate for the protection of forests in France; therefore the special forest code provides not only against wilful damage, but also against damage due to carelessness or ignorance in dealing with forests and forest lands. Still, it is not by these means that France has established her State, communal, and privately owned forests. She has in actual practice relied more on methods of example and co-operation in building up and establishing for all time her excellent forest reserves and systems of management.

The influence of the forest or its indirect value

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is a matter of great importance from national, economic, and æsthetic points of view, yet this phase of forest utility is only too often ignored. In a short but interesting chapter the author has succeeded in summarising the main facts and focussing them in an admirably lucid manner.

In the succeeding chapter the forest regions of France and the important tree species are described. An interesting review is given of the area, topography, and prevailing climatic conditions of France, and striking illustrations are given of the recent wonderful development of the natural resources of the country in hydraulic power. Further on are presented the forest statistical data, which bring out many points of absorbing interest. One striking fact is that the number of small forest owners is incredibly large. The small owner of less than 25 acres of forest is greatly in the majority, but the proportion of sawn timber to fuel wood in State-owned or technically managed forests is much more advantageous than in those privately owned.

The natural and artificial regeneration of forests, as practised in France, is well worth the close attention of students of sylviculture. An excellent account is also given of the control by afforestation of mountain torrents and lowland floods, which in the past have caused privation and ruin to thousands of the population, and untold loss to the nation.

The author also gives a most interesting account—historical, statistical, and technical—of the wonderful forests of the Landes. The almost magical transformation of a barren, fever-stricken waste of something like two million acres into a healthy and prosperous revenue-yielding territory, to the enormous advantage of France and every individual Frenchman, was a marvellous achievement. The State, as the author puts it, "blazed the trail," the good lead was followed by the "communes," and private effort did the rest. Much useful information is given concerning French Government regulations and working plans, the features of French national forest administration, and private forestry in France.

An interesting account is given of the activities of the Forest Engineers in France. The vital importance of timber in modern warfare is shown in many ways, and it is safe to conclude that without the well-planned forests and timber resources of France "the war might have been a draw or a defeat instead of a victory."

A number of interesting appendices are added which deal with specific forestry subjects, including an exhaustive list of French forestry literature, and there is a good index. The book is well illustrated with photographs and diagrams.

Our Bookshelf.

Official Statistics. By Prof. A. L. Bowley. (The World of To-day.) Pp. 63. (London: Humphrey Milford: Oxford University Press, 1921.) 2*s*. 6*d*.

A LITTLE book on statistics by so well-known an authority as Prof. Bowley is sure of a welcome from the educated public. In these times, when copious reports are issued by many Government departments, it is not only interesting, but also necessary, to appreciate fully the significance and limitations of official statistics. This is admittedly difficult, and it is with the view of steering the uninitiated through the mass of detail which necessarily obscures the real value of statistical information that Prof. Bowley has written this little book. A brief account is given of the more important reports and papers published officially in recent years containing statistics of general interest. The use of reports is illustrated by collecting details scattered throughout such a volume as the Report on Pauperism and retabulating them so as to show how the various tables are connected. In all cases exact references have been given to the original documents. The scope of the volume is well indicated by the chapter headings, four in number: population; industry, trade, and prices; income and wages; and social conditions.

A Laboratory Manual of Organic Chemistry for Medical Students. By Prof. M. Steel. Second edition. Pp. xi + 284. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1920.) 9*s*. 6*d*. net.

A CHAPTER on colloids which contains some interesting experiments forms the principal addition to this edition. Many careless expressions have been overlooked: "fused" copper sulphate and "fused" calcium oxide are not common reagents, and "hydroscopic" (p. 32) appears instead of "hygroscopic." Moreover, some of the directions for experiments do not seem to be based on trials, *e.g.* the preparation of acetylene would be dangerous if carried out as described on pp. 19–20, for air could not be displaced from the apparatus under the conditions named; also the directions given for the preparation of colloidal platinum on p. 220 do not seem correct—it would be difficult to pass a current of 10 amperes through distilled water by applying only 40 volts.

Ammonia and the Nitrides: With Special Reference to their Synthesis. By Dr. E. B. Maxted. Pp. viii + 116. (London: J. and A. Churchill, 1921.) 7*s*. 6*d*. net.

THIS small volume contains an account of laboratory investigations of the nitrides of the elements. No mention is, however, made of the very important industrial applications of the results except in the case of the Serpek process, which is not in use in the form described by the author. "Deville," on p. 37, should be "Regnault."

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